

# Spent Nuclear Stabilization and Disposition (RL-0012)

P. M. Knollmeyer, Vice President of K Basins  
Closure/(509) 376-5600

## *K West Basins*

**Deactivation-** Workers batching grout to meet the design



Fuel Retrieval System



Canister Cleaner Operations



Loading Cask on Trailer at K West

**Canister Storage Building –**  
Multi-Canister Overpack Welding



**Sludge Retrieval and Disposition-**  
Test loading large diameter container into casks at K Basins



**Cold Vacuum Drying Facility–**  
Multi-Canister Overpack Processing

## Overview

This section addresses work in Project Baseline Summary RL-0012, *Spent Nuclear Fuel Stabilization and Disposition*.

NOTE: Unless otherwise noted, all information contained herein is as of the end of August 2004.

## Notable Accomplishments

**Sludge Disposition:** The Safety Basis Amendment for K East Sludge Containerization was approved by RL. RL and the Environmental Protection Agency (EPA) approved the requested K Basin Intermediate Remedial action design changes for hose-in-hose transfer and K West sludge consolidation containers. Spent Nuclear Fuel (SNF) began removing debris from the North Load Out Pit (NLOP). FH completed installation of Tanks 1 and 2 into the technical view pit entrance channels. FH initiated flocculation skid electrical installation in the basin.

**Fuel Movement Activities:** SNF completed eleven multi-canister overpack (MCO) shipments containing 58 metric tons of heavy metal (MTHM) from the K West Basin to the Cold Vacuum Drying Facility during August. As of September 20, 2004, a cumulative total of 381 MCOs containing an estimated 2,074 MTHM have been shipped, leaving an estimated four shipments to be completed.

**MCO Welding at the Canister Storage Building:** SNF welded and "N" stamped 17 MCOs during August. As of September 20, 2004, a cumulative total of 246 MCOs were welded and "N" stamped, which leaves 159 MCOs to be welded.

**Deactivation:** The grout placement completed in the K East Basin Discharge Chute on August 20 and 22, 2004, closed the K East Basin construction joint, the source of past basin leaks. The September 3, 2004, grout pour closed the opening between the K East Basin and the 105 KE Reactor. The final pour planned for mid-September will complete the grouting of the K East Discharge Chute. The first grout pour on August 20, 2004, initiated the removal of over 8% of the basin's total water volume, thus satisfying the completion criteria for Tri-Party Agreement (TPA) Milestone M34-23, "Initiate Full-Scale K East Basin Water Removal" (due September 30, 2004).

## Issues

**Fuel Production:** Deteriorating fuel and canister integrity is continuing to have negative impacts on MCO production. Special tools were employed to lessen the impacts. Unexpected found fuel in K East is requiring additional time to disposition.

## FY 2004 FH Funds vs. Spend Forecast (\$M)

	FY 2004 Anticipated Funding w/Carryover	FY 2004 Fiscal Year Spend Forecast	Variance
SNF Stabilization & Disposition	\$ 191.0	\$ 192.5	\$ -1.4

## FY 2004 Schedule/Cost Performance (\$M)

	Budgeted Cost of Work Scheduled	Budgeted Cost of Work Performed	Actual Cost of Work Performed	Schedule Variance \$	Schedule Variance %	Cost Variance \$	Cost Variance %	Budget At Completion
SNF Stabilization & Disposition	144.2	148.2	174.8	4.0	3%	-26.6	-18%	159.1

Numbers are rounded to the nearest \$M and include the closure services allocation.

**Schedule Performance (\$4.0M/+3%):** The favorable schedule variance is due to:

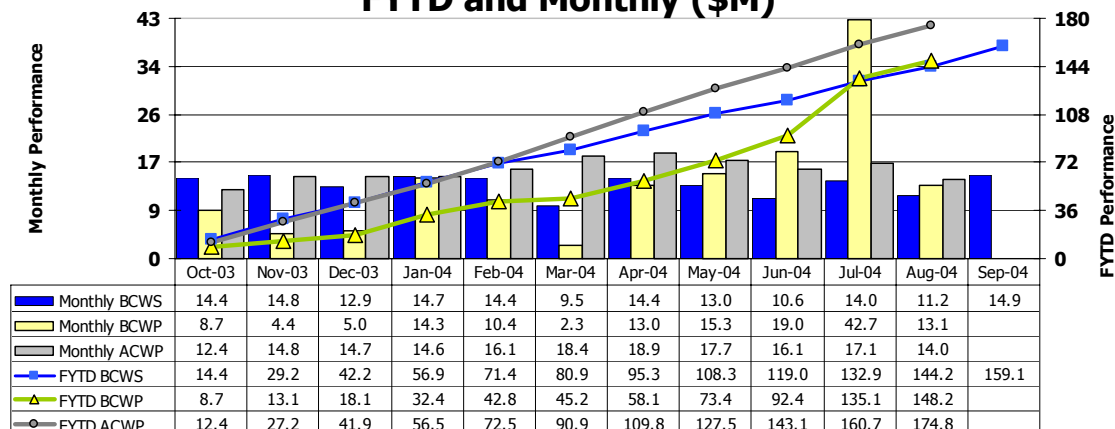
- SNF progress is now ahead of schedule (+\$6.2M). This reflects the significant progress toward the FY 2004 commitments, and the completion of the FY 2003 carryover scope.
- The unfavorable schedule variance is due mainly to two major scopes of work: NLOP (-\$0.8M) and K East Consolidation (-\$0.9M). NLOP is behind schedule due to filters clogging in the large diameter containers (LDCs). Engineering is developing a decanting process for the LDCs. The project is currently waiting on RL approval to begin vacuuming sludge. K East Consolidation is currently behind schedule due to performance issues that were found during testing of the flocculent system. SNF is currently making design changes to the system.
- The remaining variance is attributed to the behind-schedule condition in grouting the K East discharge chute. To address potential seismic analysis hazards, the grouting was done over four individual campaigns versus one campaign to allow for curing of the concrete. This variance will self correct on the final pour prior to the end of the fiscal year (-\$0.5M).

**Cost Performance (-\$26.6M/-18%):** The unfavorable cost variance is due to:

- Fuel Transfer System and MCO shipment delays, i.e., staffing requirements remain unchanged until fuel production is complete (-\$21.6M).
- The unfavorable cost variance (\$-1.0M) is due mainly to K East Consolidation. Technical issues with the K East Consolidation project are causing additional engineering resources to be utilized and require maintaining a qualified construction crew on hand.
- The remaining variance is primarily attributed to the value of general support activities that are apportioned to the overall project progress for earned value measurement practices (i.e., surveillance and maintenance, engineering, project management, apportioned against discrete activities, etc.) (-\$4.0M).

The expected cost variance at fiscal year end is expected to be about \$30M, which is directly attributable to the additional six months to support completion of the fuel movement and NLOP filter clogging in the LDCs.

### Performance Analysis FYTD and Monthly (\$M)



## Milestone Achievement

Number	Milestone Title	Type (TPA/PI/ DNFSB)	Legal Commitment Date	Due Date	Actual Date	Forecast Date	Status / Comments
M-34-25-T01 (S03-04-001) (S10-99-979)	Complete transfer of K East Basin SNF to K West Basin	TPA/PI	5/31/2004	5/31/2004	7/1/2004		Complete
M-34-18B (S00-00-902) (S10-05-012)	Complete removal of all K Basin SNF	TPA/DNFSB/ PI	7/31/2004	7/31/2004		9/30/2004	Working to complete 10/11/2004
M-034-23 (S10-99-953)	Initiate Full Scale K East Water Removal	TPA	9/30/2004	9/30/2004			On Schedule
M-034-33A (S10-05-009)	Initiate Sludge Containerization	TPA		10/31/2004			On Schedule
S10-05-013	Select Sludge Treatment Method	DNFSB		11/30/2004			On Schedule
S10-05-014	Complete K East Sludge Consolidation	DNFSB		12/31/2004		1/31/2004	Behind Schedule
M-034-33B (S10-05-018)	Complete K East Sludge Containerization	TPA		3/1/2005			On Schedule
S10-05-015	Complete K East Basin Sludge Removal	DNFSB		7/31/2005			On Schedule
M34-21-T1 (S10-99-951)	Initiate Full Scale K West Basin Water Removal	TPA	10/30/2005	12/31/2005			On Schedule
M-034-34 (S10-05-010)	Complete Removal of K East Sludge	TPA		1/31/2006			On Schedule
S10-05-016	Complete K West Sludge Containerization	DNFSB		2/28/2006			On Schedule
M-034-35 (S10-05-011)	Containerize K West Sludge	TPA		6/30/2006			On Schedule
M-034-30 (S10-05-006)	Initiate Sludge Treatment	TPA		2/28/2007			On Schedule
M-034-32 (S10-05-008)	Complete Removal of the K East Basin Structure	TPA		3/31/2007			On Schedule

## Milestone Achievement, continued

Number	Milestone Title	Type (TPA/PI/ DNFSB)	Legal Commitment Date	Due Date	Actual Date	Forecast Date	Status / Comments
M-016-57 (S10-05-004)	Initiate Soil Remediation at K East Basin	TPA		4/30/2007			On Schedule
S10-05-017	Complete Sludge Removal and Packaging	DNFSB		4/30/2007			On Schedule
M-034-31 (S10-05-007)	Complete Sludge Treatment	TPA		10/31/2007			On Schedule
M-034-00A (S10-99-955)	Complete K Basins Removal	TPA	7/31/2007	3/31/2009			On Schedule
M-016-058 (S10-05-005)	Initiate Soil Remediation at K West Basin	TPA		4/30/2009			On Schedule

NOTE: Milestones and due dates are derived from the proposed TPA Change Request M-34-04-01, which were based on the tentative agreement on Negotiations for Accelerations of K Basin Sludge Treatment and Disposal, Basin Remediation, and Delay in Sludge Retrieval signed by RL and the EPA on April 29, 2004.